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10/784,981	02/25/2004	Giancarlo Traversa	38741/GM/lp	8968

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EXAMINER
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WU, IVES J

ART UNIT	PAPER NUMBER
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1797

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/784,981

Applicant(s)

TRAVERSA ET AL.

Examiner

Ives Wu

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 18-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- (1). Applicants' Amendments and Remarks filed on 11/18/2007 have been received. Claims 1, 3 and 18 are amended. New claims 21-22 are added. Claims 16-17 are cancelled.

The rejections of claims 1-19 in prior Office Action dated 07/19/2007 is withdrawn in view of Amendments filed on 11/16/2007.

However, a new ground of rejections for claims 1-15 and 18-22 are introduced in the following.

#### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- (2). **Claim 10** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, it recites: "The composite material according to claim 5, wherein". It renders indefinite because of incomplete sentence.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(3). **Claims 1-7, 9, 11-15, 18, 20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Minghetti et al (US05705552A) in view of Leverrier (US05877246A).

As to a polymeric matrix incorporating a filler material distributed in matrix in a thermosetting composite material, particularly for manufacturing sanitary articles and kitchen sinks comprising a polymeric matrix that incorporates a filler material distributed matrix ranged from 60 to 85 % in **independent claim 1** and **claim 3**, and polymeric matrix to be constituted by a solution of polymethyl methacrylate in methyl methacrylate in **claim 2**, polymeric matrix to be constituted by a syrup of polymethyl methacrylate in methyl methacrylate ranged from 25 to 30 wt% of the matrix in **claim 5**, Minghetti et al (US05705552A) disclose thermoformable acrylic sheet having uniform distribution of color and mineral filler (Title). The PMMA containing compositions are useful in the manufacture of sheets or slabs. The sheets can be heat bent, or thermoformed at an angle as sharp as ninety degrees and/or can be vacuum thermoformed into shapes such as sinks and bowls (Col. 1, line 14-16, 29-32). A syrup of MMA having PMMA dissolved therein as follows (by weight): Content of PMMA dissolved in MMA: **0-30 wt%**, preferably 10-25 wt% (Col. 2, line 63-67). The compositions also comprises about **20-60 wt%** of solid particle dispersed therein (Abstract, line 7-9).

As to filler material being constituted by glass particles the predonderant fraction of which has a size distribution from 0.2 to 1.5 mm in **independent claim 1**, Minghetti et al (US05705552A) disclose the particulates not to be visibly distinguishable in the finished product. In the context, the majority of particles will be less than about 90 microns, and preferably are mostly **less than about 60 microns**. The particles' composition may be any composition having similar properties, preferably Alumina trihydrate (Col. 3, line 37-42). Minghetti et al (US05705552A) **do not teach** the particulates to be glass particles as claimed.

However, Leverrier (US05877246A) **teaches** moulding material composition (Title). The filler material can be chemically coated glass microbeads (Abstract, line 6-8).

The advantage of using glass micro-beads as filler is for better filling of moulds and an improved compactness and uniformity of mixture (Col. 2, line 25-28) under pressure (Col. 2, line 65 - Col. 3, line 1).

Therefore, it would have been obvious at time of the invention to use the glass microbeads of Leverrier for the particulates in the compositions of Minghetti et al in order to attain the advantage cited above. Moreover, the particulates disclosed by Minghetti et al is genus, the glass microbeads of Leverrier is species, one of ordinary skills in the art would recognize that all species work well for the genus, motivated by a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

As to the polymeric matrix being in amount of 15 to 40 wt% in **claim 4**, Minghetti et al (US05705552A) disclose the MMA/PMMA (20%) syrup in 59.75 wt% in Example 1 (Col. 6). In absence of showing criticality of the records, the optimized amount of syrup being 15 to 40 wt% in a known process renders *prima facie obviousness* within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980).

As to catalyst in amount of 0.5 to 0.8% in **claim 6**, Minghetti et al (US05705552A) disclose catalyst in Example 1 (Col. 6). Leverrier disclose an organic peroxide catalyst to be used to trigger cross-linking of the resin by the provision of free radicals during their destruction at high temperature (Col. 3, line 51-53). Catalyst of tertiary butyl ethyl-2 perexanoate (0.03 to 0.5%) is used (Col. 5, line 12).

As to coloring fraction at a concentration from 1 to 5% with respect to the weight of the matrix in **claim 7**, in absence of showing the criticality of records, the optimization of coloring fraction to be 1 to 5 wt% in known process renders *prima facie obviousness* within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272,276,205 USPQ 215, 219 (CCPA 1980).

As to filler material having a coating layer made of organofunctional silane particles in **claim 9**, Leverrier (US05877246A) disclose chemical coating of the glass micro-beads with "SILANE" (organofunctional silane) induces a chemical bridging effect between the resin and beads, which naturally improves the keying (Col. 2, line 25-28).

As to 1 to 2.5 wt% of cross-linking agent in **claim 11**, Minghetti et al (US05705552A) disclose 0.5 to 1.0 wt% of cross-linking agent (Col. 3, line11-12).

As to 0.1 to 0.2 wt% of a release agent in **claim 12**, Leverrier (US05877246A) discloses a stripping agent to be preferably used in amount of 0 to 1.7 % (Col. 5, line 27-29).

As to 0.2 to 1 wt% of an antisetling agent in **claim 13**, Minghetti et al (US05705552A) disclose thickening agents as well as thixotropic agents to enhance the inertia tendency of a particle to remain stationary in the matrix suspension (Col. 4, line 23-26). In absence of showing the criticality of records, the optimization of antisetting agent to be to be in amount of 0.2 to 1 wt% in known process renders prima facie obviousness within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272,276,205 USPQ 215, 219 (CCPA 1980).

As to 0.5 to 1 wt% of organofunctional silanes in **claim 14**, in absence of showing the criticality of records, the optimization of organofunctional silane to be 0.5 to 1 wt% in known process renders prima facie obviousness within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272,276,205 USPQ 215, 219 (CCPA 1980).

As to filler materials ranged from 70 to 80 wt% in **claim 15**, Minghetti et al (US05705552A) disclose the particle filler used about 20 to 60 wt% (Abstract, line 9). In absence of showing the criticality of records, the optimization of filler to be 70 to 80 wt% in known process renders prima facie obviousness within one of ordinary skills in the art. *In re Boesch*, 617 F.2d 272,276,205 USPQ 215, 219 (CCPA 1980).

As to the thermosetting composite material, polymeric matrix, filler to be 60 to 85 wt% being constituted by glass particles having size ranged from 0.2 to 1.5 mm and coated with organofunctional silane in **claims 18**, the disclosure of Minghetti et al, Leverrier is incorporated herein by reference, the most subject matters as currently claimed, have been recited in applicants' claims 1 and 9, and have been discussed therein.

As to limitations of **claim 20**, the disclosure of Minghetti et al, Leverrier is incorporated herein by reference, the most subject matters as currently claimed, have been recited in applicants' claims 1 and 5, and have been discussed therein.

As to limitation of **claim 21**, the disclosure of Minghetti et al, Leverrier is incorporated herein by reference, the most subject matters as currently claimed, have been recited in applicants' claims 1 and 4, and have been discussed therein.

As to limitation of **claim 22**, Minghetti et al (US05705552A) disclose a syrup of MMA having PMMA dissolved therein as follows (by weight): Content of PMMA dissolved in MMA: **0-30 wt%**, preferably 10-25 wt% (Col. 2, line 63-67).

(4). **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Minghetti et al (US05705552A), in view of Leverrier (US05877246A), further in view of Abe et al (US04334933).

As to the colored glass in **claim 8**, Leverrier et al **does not teach** the use of colored glass.

However, Abe et al **teach** the stable inorganic pigment by coating the fine amorphous silica on pigment particle (Col. 1, line 7-9).

The advantage of using the stable inorganic pigment is for high chemical resistance, hydrogen sulfide resistance, light resistance, weatherability, heat resistance and storage stability (Col. 1, line 9-12)

Therefore, it would have been obvious at time the invention was made to replace filler in the thermosetting composition taught by Minghetti et al, Leverrier et al with filler of colored glass taught by Abe in order to obtain the above-mentioned advantage.

(5). **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Minghetti et al (US05705552A), in view of Leverrier (US05877246A), further in view of Williams et al (US04156677).

As to mercaptosilane in **claim 19**, Leverrier (US05877246A) discloses the SILANE™, or SQALANE™ coupling agents (Col. 2, line 26, Col. 6, line 14). Minghetti et al, Leverrier **do not teach** mercaptosilane as claimed.

However, Williams et al (US04156677) **teaches** polymer composite articles containing amino substituted mercapto organo silicon coupling agents (Title). polymer composites, such as rubber, thermoset and thermoplastic articles, comprising reaction product of a (a) an organic polymer, (b) an inorganic substrate and (c) an amino substituted mercapto organosilicon coupling agent, and articles comprising an inorganic substrate treated with amino substituted mercapto organosilicon coupling agent (Abstract). The organic polymer components include a wide variety of polymers such as acrylic acid and its esters and amides, methacrylic acid and its esters and amides. Illustrative examples of such polymers, either singularly or in adjuncture with each other include any of homopolymers and copolymers (Col. 2, line 43-55). Inorganic

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substrates employed include siliceous materials such as plate glass, glass fibers and the like (Col. 3, line 34-39).

The advantage of using amino substituted mercapto organosilicone is to improve the physical properties of the same finished composite product, such as tensile modulus (Col. 14, line 32-59).

Therefore, it would have been obvious at time of the invention to use amino substituted mercapto organosilane coupling agent disclosed by Williams for the coupling agent disclosed by Leverrier in the composite material of Minghetti et al, Leverrier in order to attain the advantage cited above.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 18 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

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Date: January 7, 2008

DUANE SMITH  
PRIMARY EXAMINER

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1-9-08